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Anti-Pragmatism. By ALBERT SCHINZ. Boston, Small, Maynard & Co., 1909.—pp. xx, 317.

The militant spirit in which Professor Schinz approaches the subject of pragmatism is indicated not only by the title of his book, but also by the fact that the original French edition is followed by an English rendering within a year. Professor Schinz has at his command a vigorous English, which, however, bears unmistakable marks of foreign influence. Pragmatism, as the author understands it—at least Anglo-Saxon pragmatism—is a philosophy which holds that a theory or law is true "when it gives *results that are desirable from a moral point of view,*" when it is socially useful or expedient (p. 41). As Professor Schinz sees the matter, the results or consequences of which the pragmatist speaks are external to the thinking which they are supposed to validate; and his purpose is to show that this doctrine is both pernicious and inconsistent, "fain to draw us far from the forthright way" (p. xvi).

Since the book was reviewed when it first appeared in French, extended comments are now unnecessary. In one respect the unbiased reader is able to accord a hearty approval to the labors of Professor Schinz. After so much loose language, during recent years, concerning 'consequences' and 'the practical,' a retribution is demanded by our sense of the fitness of things. Those pragmatists who have sinned so flagrantly in this respect merely get what they deserve. Regarded as a contribution to the discussion of pragmatism, however, the book is less edifying. Professor Schinz criticizes some of the pragmatists for their careless use of technical terms, and he even seems to imply that the slipperiness of these terms is, on occasion, due to premeditated wickedness. While he himself has patently escaped this moral obliquity, his use of terms like 'intellect,' 'reason,' and 'subjective' practically precludes an intelligent discussion of issues. He does not see that the meaning of these terms constitutes the gist of the whole business. The important thing about pragmatism is that it claims to offer an analysis of what is meant by those terms which Professor Schinz employs so freely, and thus to arrive at a distinctive theory concerning these matters. The import and tenability of this theory must be judged by an examination of the analysis; not by the easy expedient of fastening upon unguarded or misguided utterances, particularly since the interpretation thus reached is explicitly rejected by the persons directly concerned. Attacks of this kind lead merely to irrelevant skirmishing and result in nothing but a deplorable loss of ammunition.

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Étude sur l'espace et le temps. Par GEORGES LECHALAS. Deuxième édition, revue et augmentée. Paris, Félix Alcan, 1910.—pp. 327.

The first edition of this book was published in 1895 and was noticed in this REVIEW, Vol. V, pp. 440 ff. So much has been added to the present edition that it constitutes almost a new work. It could hardly be otherwise in a subject which has received so much attention during the last fifteen years.

Two new chapters have been added on the non-metrical and the metrical geometries, criticisms of the former edition have been answered, and recent French literature has been taken into account. Lechalas, as is well known, is a partisan of the new geometry which throws off the shackles of Euclid and the limitation of dimensions. But his book is not a defense of these doctrines against philosophical objections, but rather a plea for his own particular version of them, as opposed to the slightly differing ones of other French mathematicians.

Lechalas's interests are decidedly those of the geometrician rather than of the strict logician. His method is synthetical rather than analytical. Though he applauds the efforts of the logicians to reduce geometry to a series of thoroughly abstract symbolic propositions, a mere branch of a general science of deduction (Russell, Couturat, Peano, etc.), nevertheless he regards their systems as imperfect and incomplete, and hence the synthetic method is for the time to be preferred. The *general* geometry which he advocates aims to include in one unified system all possible spatial constructions, Euclidean and non-Euclidean, of any number of dimensions. In this he emphasizes their inter-relations and necessary interdependence. Thus the curvatures of different spaces, when of the same sign, cannot be compared with each other, unless they are referred to a higher *flat* space, in which they may separately co-exist. Moreover, they have extrinsic properties, such as the congruence of certain symmetrical figures, which can only be properly understood by reference to such a higher space. Euclidean space is thus practically made the standard space by variation from which the others are derived. Evidently Lechalas is not well acquainted with the polemics of the German philosophers, for this is precisely the objection which has been most frequently urged by them against the so-called *curved* spaces, viz., that they are not spaces at all in any true sense of the word, but merely figures in a conceived Euclidean space of more dimensions. (*Cf.* Weissenborn, Riehl, Wundt, Kroman, Laas, Heymans, Kirschmann.) This accounts for the opposition of the French mathematicians, who see in Lechalas's theory a dangerous concession to the opposing side, and who therefore insist on the complete independence and isolated treatment of the different spaces. But the system of Lechalas seems to us more consistent and connected than the other theories, and to avoid many of their metaphysical perplexities.

Lechalas shows that not only may different systems of mechanics result from the different geometries, but also from the different sorts of time used. Pure kinematics, being merely the relating of the space variables to a new temporal variable of which they are functions, is independent (in its abstract development) of any actual measure of time. Dynamics results from the further introduction of the notion of mass. Masses are defined as co-efficients to be given to the moving points of kinematics, inversely proportional to the accelerations which they mutually induce. The notion of force is found superfluous. Mass being thus defined merely in terms of space and time, the problem of similar worlds is readily solved. Lechalas shows that, if all the dimensions of the world were changed in the same proportion, or if the velocities of all bodies in it were changed proportionately but according to a different law, there would be no possible way in which we could become cognizant of the change. His arguments in this respect appear conclusive, despite the contrary assertions of many philosophers. From this he rightly deduces the complete relativity of space and time.

We cannot really measure time, but only count recurrent phenomena. We merely compare one motion with another. But we find that by choosing certain axes as fixed and a certain motion as uniform, a greater simplicity is introduced into the dynamical description of the universe. Similarly, with regard to the geometry of our space, experience so far as it goes shows that it is three-dimensional and Euclidean. Lechalas denies, however, Poincaré's assertion that we agree to accept this geometry merely because it is the simplest. The very fact that this geometry most simply represents the facts argues for its significance of reality.

Mechanical equations make no distinction between the before and after. As far as they are concerned the world is completely reversible. But the reversed system would, according to Lechalas, be in the highest degree unstable and improbable. It is to be objected to this that probability hardly enters into a thoroughly mechanical world. The distinction between the past and the future only becomes real, Lechalas thinks, if we derive time from the law of causality. The conditions *precede* the conditioned. This defines uniquely the temporal relation. Some interesting applications of this view are made to the relation of God to time.

Very remarkable is Lechalas's solution of Zeno's problems. Motion, according to him, is discontinuous, while space and time are only potentially, never actually, infinite and continuous. A moving body apparently jumps from point to point, and since there never actually are an infinite number of them, it succeeds in arriving at its destination despite the arguments of Zeno. It is hard to see that either mathematics or mechanics is benefited by this solution.

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Life as Reality. By A. S. DEWING. New York, Longmans, Green, & Co., 1910.—pp. x, 214.

That reality may be defined "in terms which will give full value to the will-strivings of our life-interests without degenerating into crude individualism" is the thesis announced in the preface, the defence of which seems to the reviewer somewhat handicapped by the author's evident unwillingness to define it in any terms whatever. The efforts of empiricism, realism, science, art, religion, and philosophy are successively reviewed. All are inadequate, or at most only partial, expressions of the one reality, Life, which to be known can only be lived and being lived cannot be known. Reality as life "is irreducible, that is, single. Its value and its significance is just that something